

### **DETAILED ACTION**

This action is in response to the BPAI decision filed on 10/26/2011. After thorough search, application history, BPAI decision review and in light of the prior art made of the record, claims 1-4, 9, 10, 13, 15-21, 23, 27, 28 and 30-34 are allowed.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Romiwa Akpala (Reg. No. 59,775) on 01/19/2012. Please see the Interview summary form for details.

#### **The application has been amended as follows:**

1. (Currently Amended) A method of effecting secure communications between a server and a client, the server executed in a server computer, the method comprising:  
detecting, at the server computer, a client connection at a first port;  
providing, by the server computer, the client with a decoy port number; and  
providing, by the server computer, services to the client on a second port having a second port number that is mapped to the decoy port number, wherein the second port number is different from the decoy port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and  
if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.
2. (Previously Presented) A method as defined in Claim 1, wherein the decoy port

number is provided to the client by the operation of a routine that is associated with the server, the routine executed in the server computer.

3. (Original) A method as defined in Claim 2, further comprising: launching the server on the second port; and monitoring the second port for a connection by the client.

4. (Original) A method as defined in Claim 3, further comprising: if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently Amended) A computer system comprising:

a plurality of ports, each port having a respective port number; a server application; and a routine that, if executed, is operative to:

detect a client connection at a fast port; provide the client with a decoy port number; and provide services to the client on a second port having a second port number that is mapped to the decoy port number, wherein the second port number is different from the decoy port number;

maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to

valid port numbers at the client computer; monitoring the second port for a connection by the client, and

if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

10. (Original) A computer system as defined in Claim 9, wherein the routine, if executed, is operative to:

launch the server application on the second port; and  
monitor the second port for a connection by the client.

11. (Cancelled)

12. (Cancelled)

13. (Original) A computer system as defined in Claim 12, wherein the routine, if executed, is operative to:

launch the server application on the second port subsequent to providing the decoy port number to the client.

14. (Cancelled)

15. (Currently Amended) A server computer system comprising: a plurality of ports, each port having a respective port number; a first server application; and

a first routine that is associated with the first server application and that, if executed, is operative to: detect a client connection at a first port; transmit a decoy port number to the client; terminate the connection to the first port; and

provide services to the client on a second port having a second port number that is mapped to the decoy port number, the second port number being a valid port number that is different from the decoy port number;

a second server application; and

a second routine that is associated with the second server application and that, if executed, is operative to: detect a client connection at a third port; transmit a second decoy port number to the client; terminate the connection to the third port; and provide services to the client on a fourth port having a fourth port number that is mapped to the second decoy port number, the fourth port number being

another valid port number that is different from the second decoy port number; maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and

if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

16. (Previously Presented) A server computer system as defined in Claim 15, wherein the first routine and the second routine, if executed are operable, respectively, to:

terminate execution of the first server application on the second port if there is no client connection within a predetermined time interval; and

terminate execution of the second server application on the fourth port if there is no client connection within a predetermined time interval.

17. (Currently Amended) A method executed by a client computer, comprising: attempting to access a server application on a first port of a server computer; receiving, from the server computer, a decoy port number that is an invalid port number; translating the decoy port number to a valid port number; and connecting to the server application on the valid port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

18. (Previously Presented) A method as defined in Claim 17, wherein the decoy port number is translated using a wrapper script associated with a client application in the client computer.

19. (Previously Presented) A method as defined in Claim 17, wherein the decoy port number is translated using code embedded in a client application in the client computer.

20. (Previously Presented) A method as defined in Claim 17, further comprising: mapping the decoy port number to an intermediate port number; and effecting an offset to the intermediate port number to produce the valid port number.

21. (Currently Amended) A computer system comprising: a plurality of ports, each port having a respective port number; an application; and

means for effecting secure access to the application by redirecting a client from a first port to a second port, wherein the means for effecting secure access comprises:

a routine that, if executed, is operable to provide the client with a decoy port number that maps to a second port number of the second port, wherein the decoy port number is an invalid port number and the second port number is a valid port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

22. (Cancelled)

23. (Currently Amended) An article comprising a non-transitory machine-readable storage medium that comprises instructions that, if executed, cause a server computer to:

detect a connection at a first port of the server computer by a client application;

transmit, to the client application, a decoy port number, wherein the decoy port number is an invalid port number; and

cause a server application in the server computer to be launched at a second port that has a second port number mapped to the decoy port number, the second port number being a valid port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and

if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Currently Amended) A client/server system comprising: a server computer system; and a server application installed on the sever computer system and comprising instructions that, if executed on the server computer system, are effective to: detect a connection at a first port by a client application; transmit, to the client application, a decoy port number, wherein the decoy port

number is an invalid port number;

terminate the connection on the first port; and

provide services to the client application on a second port having a second port

number that is mapped to the decoy port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table

maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to

valid port numbers at the client computer; monitoring the second port for a connection by the client, and  
if there is no connection by the client within a predetermined time interval, terminating execution of the server on the second port.

28. (Previously Presented) A client/server system as defined in Claim 27, further comprising: a client computer system; and

a client application installed on the client computer system and comprising instructions that, if executed on the client computer system, are effective to: attempt to access the server application on the first port; translate the decoy port number to the second port number; and connect to the server application on the second port.

29. (Cancelled)

30. (Previously Presented) A client/server system as defined in Claim 28, wherein the client application further comprises instructions that, if executed on the client computer system, are effective to:

map the decoy port number to an intermediate port number, and

impart an offset to the intermediate port number so as to derive the second port number.

31. (Previously Presented) The method as defined in Claim 1, wherein providing the decoy port number comprises providing the decoy port number that has no meaning to an unauthorized client computer, but the decoy port number is mappable to the second port number by an authorized client computer.

32. (Previously Presented) The computer system as defined in Claim 12, wherein the decoy port number provided to the client enables the client to map, using a second table associated with the client, the decoy port number to the second port number such that the client can connect to the computer system at the second port number.

33. (Previously Presented) The computer system as defined in Claim 9, wherein the decoy port number has no meaning to an unauthorized client computer, but the decoy port number is mappable to the second port number by an authorized client computer.

34. (Previously Presented) The article of Claim 23, wherein the decoy port number is meaningless to an unauthorized client computer, but the decoy port number is mappable to the valid port number by an authorized client computer.

#### **Reasons for Allowance**

The following is an examiner's statement of reasons for allowance: The closest prior arts Yarborough and Hipp alone or in combination do not teach or suggest applicant's invention, "providing, by the server computer, the client with a decoy port number; and providing, by the server computer, services to the client on a second port having a second port number that is mapped to the decoy port number, wherein the second port number is different from the decoy port number; and maintaining, in the server computer, a table of available decoy port numbers that are mapped to valid port numbers wherein the table maintained in the server computer corresponds to a second table maintained at a client computer on which the client is executed, the second table mapping decoy numbers to valid port numbers at the client computer; monitoring the second port for a connection by the client, and if there is no connection by the client within a

predetermined time interval, terminating execution of the server on the second port” as claimed in independent claim 1 and similarly in independent claims 9, 15, 17, 21, 23 and 27.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to UMAR CHEEMA whose telephone number is (571)270-3037. The examiner can normally be reached on M-F 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Peter-Anthony Pappas can be reached on 571-272-7646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Umar Cheema/  
Examiner, Art Unit 2444

/Djenane M Bayard/  
Primary Examiner, Art Unit 2444